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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/608,486 | 06/27/2003 | Charles B. Greenberg | 1240D3 | 7837 |
| 7590 12/02/2004 | | | EXAMINER | |
| PPG Industries, Inc. ONe PPG Place Pittsburgh, PA 15272 | | | MCNEIL, JENNIFER C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1775 | |

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,486

Applicant(s)

GREENBERG ET AL.

Examiner

Jennifer C McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26, 41-65, 67, 68 and 70-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-65, 67, 68 and 70-81 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-26 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

The terminal disclaimer filed on September 7, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent 6,054,227 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahama et al (US 5,811,192). Takahama teaches a titanium dioxide film having photocatalytic activity. The film may be deposited onto glass or metal. The film may have a thickness of 1000-20000 angstroms (100-2000 nm). Regarding the method limitations for deposition of the film, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious different between the claimed

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product and the prior art product (*In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113). Regarding claims 2 and 7, as the film of Takahama comprises the same composition of the claims, it is fully expected to possess the same characteristics. Regarding claims 8 and 9, the means by which the reaction rate is determined is not considered to structurally limit the article itself.

Claims 1, 2, 4-6, 10, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Finley et al (US 5,830,252). Finley teaches an alkali metal diffusion barrier layer. The layer may be deposited onto glass, and comprises titanium oxide, zinc oxide, zinc/tin oxide, and has a thickness of less than 180 Angstroms. Regarding claim 10, the layer is deposited on the substrate.

Claims 1-6, 10-12, 14-18, and 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by McCurdy (US 6,238,738). McCurdy teaches a titanium oxide coating deposited via CVD on glass. As shown in Table 1 and the examples, the titanium oxide layer may have a thickness of less than 100 Angstroms, and up to 1300, with specific examples of 490 A, 800 A, 684 A, and 836 A. The layer may be deposited directly onto the substrate or may also have an intermediate layer therebetween. The intermediate layer may comprise silica. An example of the thickness of the silica layer is 339 A.

Regarding claim 22, the coating may be deposited onto a glass float ribbon.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurdy (US 6,238,738). McCurdy teaches a silica layer between the titanium oxide layer and the substrate, but does not give a range of thicknesses that may be used. A thickness of 339 Angstroms is given. Absent a showing of unexpected results, one of ordinary skill in the art would have found it obvious to provide the silica layer having a thickness sufficient for the desired function, and that does not interfere with the function of the overlying layer.

Allowable Subject Matter

Claims 41-65, 67, 68, and 70-81 are allowed.

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The indicated allowability of claims 22-24 is withdrawn in view of the newly discovered reference(s) to McCurdy (US 6,238,738). Rejection based on the newly cited reference is above.

Response to Arguments

Applicant's amendments have overcome the objections and 112(2) rejections of the previous office action. The submission of a terminal disclaimer overcomes the double patenting rejection. Applicant's amendment to the claims has overcome the rejection over Fujishima '327.

Applicant's arguments filed September 7, 2004 have been fully considered but they are not persuasive. Regarding the Takahama '192 reference, applicant states the reference does not teach a titanium dioxide film having a thickness less than 1000 Angstroms. Applicant's attention is drawn to the paragraph in Takahama that refers to the thickness of the layer, column 5, and lines 40-55. This paragraph states that a range of 50 nm to 200 nm may also be used. 50 nm corresponds to 500 Angstroms, which falls within applicant's claimed range. The rejection is held.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C McNeil whose telephone number is 571-272-1540. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer McNeil
November 26, 2004